Priority Table
February 25, 2002

At the January 9th meeting committee members decided to undertake an exercise involving a comparison of the "must" and "might" issues with provisions in the proposed rules. The committee decided to conduct this exercise to assist in deciding what the next steps should be in addressing these priority issues. Below is a table to assist committee members in recording the results of their evaluation. Committee members who attended the January 9th meeting were given one to three issues to evaluate. This comparison is to the version of the proposed rules that were approved for public hearing at the June 2001 Natural Resources Board meeting. This version is available at http://www.dnr.state.wi.us/org/aw/air/reg/mercury/rule.htm. The results of this exercise will eventually be incorporated into the priority matrix document.

Members doing the evaluation where asked to identify at a minimum the section(s) of the proposed rules that relate to each issue e.g. 1. Agreed schedule of reductions – NR 446.06 **Mercury reduction requirements for major utilities**. It was recognized that several sections of the proposed rules could relate to an issue and that certain issues may not have a specific relationship to the proposed rules. Evaluators were asked to freely use the comment column to expand upon their evaluation.

It was suggested that future comparisons of this nature to the Environmental Assessment and rule alternatives offered during public hearings might be appropriate.

At the January 18th meeting, Committee members discussed the evaluations that had been completed in advance of that meeting and decided to revise the table by adding three columns - Possible Revisions to Proposed Rules or Other Actions - Technical Advisory Group Comments - Proposed Remedy.

At the February 13th meeting, Committee members agreed to begin drafting individual responses for the "Possible Revisions to Proposed Rules or Other Actions" column. This version includes the drafts received from four Committee members.

	Issue	Index To Rule Provisions	Comments	Possible Revisions to Proposed Rules or Other Actions	Technical Advisory Group Comments	Proposed Remedy
1.	Agreed schedule of reductions. Criteria for setting mercury reduction levels. Why do we need phased reductions?	s. NR 446.06 (1) – (3)	June 5, 2001 Bazzell memo to NRB(Keith Reopelle)	- Revise to WUA proposal of 10% reduction in 5 years and 40% reduction in 10 years. - Add a provision that will allow for alignment with Federal MACT and multi-pollutant regulations. - Conduct review of variables affecting time to implement rule (i.e., outage schedules, PSC approvals, joint ownership consideration, design and equipment availability, etc...)(Joe Shefchek)		

				Develop technical and economic basis for establishing controls and reduction levels to include electric rate impacts and environmental benefits analysis. Reduction requirements need to be consistent with Federal requirements. (Annabeth Reitter) Instead of revising the rule to a more relaxed reduction level, write it for the best (cleanest) that new technology can implement. Committing to the highest standard earliest is also the most cost-effective for utilities to implement. Rather than conduct a review of variables, eliminate redundancy such as PSC involvement; (i.e., PSC having prejudiced themselves by defining their opinion before public hearings were concluded.) (Mark Yeager)		
2.	Impact on electric reliability, fuel mix, and energy costs.	s. NR 446.12 (1) – (7)	(Keith Reopelle)	- Define rule language more clearly, specifying the criteria necessary to meet eligibility for variance - this includes defining key considerations to determine the maximum degree of emission control that is achievable when considering technical feasibility, energy impacts, net multi-media environmental benefits, economic impacts (capital and operational expense) and other potential costs (i.e., monitoring, maintenance). - Define rule language more clearly, regarding the procedures for variance approvals and required qualifications of person(s) responsible for evaluation/approval of variance		

				requests. - Add rule provisions to address short-term system failures that allow for "on the spot" determinations in the event of eminent and immediate issues jeopardizing system reliability - i.e., such as unexpected unit shutdowns, control equipment malfunctions, monitoring equipment problems, etc...(Joe Shefchek) Important issue to consider in developing the reductions levels and cannot just be limited to the variance issue. Involve PSC in an analysis on the impact of electric reliability, fuel mix and energy cost. (Annabeth Reitter) Studies show willingness to pay between $ 120 and $ 200 per year per household for as little as 12% Hg deposition reduction. These dollars go directly to the utilities for new clean-up technology and service reliability….it does not cost utilities anything in profits, therefore should not be a reliability threat. Conservation and efficiency programs have yet to be considered, yet the talk has been of "meeting demand." Let's reduce demand before meeting it. (Mark Yeager)		
3.	Identification of mercury control technologies available today.		(Keith Reopelle)	- Complete an updated review of control technologies from most current technical resources - EPA, EPRI, DOE, control equipment vendors. This review should identify factors affecting commercial availability as well technical and economic feasibility. - Update rule cost evaluations to include		

				most recent control equipment costs and consider assumptions reflecting potential range of implementation scenarios (ex., initial phase reductions applied on multiple units, retrofitting costs, stranded costs, etc...)(Joe Shefchek) In establishing reduction levels the DNR needs to take a technology evaluation approach including an economic and technical feasibility analysis. (Annabeth Reitter) TAG could enlighten CAC on Hg control technologies, but new control technologies will be developed to meet the demand of what the new rule requires. Therefore write the rule for the highest level of protection of health, the market and technology will respond and people are willing to pay for clean air & water. (Mark Yeager)		
4.	What are the mercury contributions from local and regional sources? What are the sources of mercury deposition in Wisconsin lakes?	No reference in rule language	The Environmental Assessment attempts to address these issues, although the adequacy of the EAs' evaluation is questioned by stakeholders. (Jeff Schoepke)	- Update mercury emissions inventory to reflect most recent information on industrial, commercial, domestic and natural sources - including review of data available on the form of mercury emissions (i.e., ionic, elemental, or particulate) as this affects deposition patterns. - Complete atmospheric deposition modeling using updated mercury emissions source inventory and characterization. (Joe Shefchek) Establish a research council to develop necessary information to identify mercury contributions from local and regional sources and assess		

				environmental impacts from various control options. This work of the research council should serve as the foundation for establishing reduction levels. This work needs to be completed before reduction requirement levels are established. (Annabeth Reitter) More studies are desirable for tracking information, but time is of the essence to implement the cleanest technology as soon as possible. For the purpose of this rule, about 70% is considered from man-made global sources with 25% from the upper Midwest and about 12% from WI. Of this, utilities account for the majority contribution. Again we can't all wait for each state to clean up it's own backyard before acting. (Mark Yeager)		
5.	How should we address new sources?	NR 446.05 Mercury Emission Offsets	NR 446.05 bans the construction of new plants unless the proposed new or modified source is offset by an equal or greater reduction in actual emissions of mercury at a ratio of 1.5 to 1.0. (Jeff Schoepke)	- Complete evaluation to estimate the potential amount future mercury offsets necessary versus the amount of credits that may be available (from pollution controls or mercury-product collection). Assess whether the 1.5:1 offset requirement is feasible and sustainable (i.e., will not result shortages driving up costs). - Add "set aside" provisions to rule (i.e., bank of credits maintained under WDNR or state control versus private entity control) to ensure sufficient credits are available to support new source growth. - Add provisions to rule that allow new sources to apply for a variance in the event there are insufficient emissions credits available, provided that emissions sources are constructed using		

				best available control technologies to reduce mercury emissions. - Revise rule provisions concerning minimum 50 lb threshold for certifying mercury-containing product reduction projects, thereby increasing availability of credit incentives. - Revise rule provisions concerning minimum 5 lb threshold for certifying pollution reduction projects, thereby increasing availability of credit incentives. - Revise rule provisions allowing utilities to obtain more than 25% of reductions from mercury-containing products or pollution reduction projects, thereby increasing availability of credit incentives. - Consider the effect that other mercury regulations may have on the pool of available mercury credits (i.e., such as Federal MACT). Reconsider current draft rule provisions that do not allow for certification of credits for emissions reductions required due to other local, state or federal Hg regulations (i.e., mercury reductions are not creditable if required for non-NR446 rules). - Allow sources credit for mercury emissions reductions made before the rule's required baseline years. (Joe Shefchek) Eliminate the offset reduction requirement. Either new sources are subject to MACT or do a model impact assessment and control to no significant impact taking into account economic and technological feasibility issues. (Annabeth Reitter)		

				New sources should be held to the strictest/cleanest standards. (Mark Yeager)		
6.	What are the impacts on human health if no actions are taken?	No reference in rule language	(Jeff Schoepke)	- Complete side-by-side evaluation of various technical resources on mercury health impacts to determine range of risk factors. - Consider a "no action" alternative that takes into consideration future reductions from Federal MACT and potential multi-pollutant bills. (Joe Shefchek) Benefits analysis conducted by a research council to determine human health impacts resulting from mercury deposition from Wisconsin sources. This information is fundamental in establishing reduction requirements. (Annabeth Reitter) Accept State Dept. of Health toxicologist's report to CAC citing negative health effects on humans. Human health is declining with no action. Hg fallout affects soil toxicity and directly impacts the human food chain through WI agriculture. Consider "no action" only if humans are proven beyond a doubt to have no reaction to Hg effects in air, water, living lake organisms and are exempt from any environmental interaction. (Mark Yeager)		
7.	Multi-pollutant control option.	NR 405.02(22)(c) volatile organic compounds, NR 445.01(1)(a) hazardous pollutants, NR 446.04(b)(4)(c) liquid fuel analysis for mercury, NR 446.11(3)(b)(4) alternative emission monitoring, NR	Most of the rule deals only with mercury as indicated below: The Department proposes to require atmospheric mercury emission reductions from major electric	- Develop an option in the rule that allows for multi-pollutant controls, considering what the potential total emissions reductions would be versus an Hg-only approach. - Revise language for "rule evaluation		

		484.10 ASTM fuel sampling methods.	utilities, cap mercury emissions from other major stationary sources, and require offsets of potential mercury emissions from new or modified major stationary sources. This requirement would be within Chapter NR 450 Wis. Adm. Code and adopted under s. 285.11(9), Wis. Stats. The objective of the proposed rule is to set limits on the emissions of mercury into the ambient air from mercury sources as a means of reducing atmospheric mercury deposition to Wisconsin's environment and specifically, the State's water bodies. This would reduce the mercury concentrations in fish and wildlife that consume fish. Reducing the mercury concentration in fish will reduce the human health risk associated with that portion of the population that consumes fish. It will also reduce the potential negative economic impacts associated with fish consumption advisories. *From the draft Environmental Assessment*. (Wayne Stroessner)	reports" to include periodic consideration of federal multi-pollutant bills or regulations to determine interaction with WI mercury rule in order to address rule compatibility. (Joe Shefchek) Reduction requirements need to be consistent with Federal requirements. (Annabeth Reitter) There does not appear to be a need for a revision to this item. NR 445.01(1)(a) "…applies to all air contaminant sources which may emit hazardous pollutants and to their owners and operators…for the specific hazardous air contaminants regulated under those chapters or to a source which must meet a national emission standard for a hazardous air pollutant promulgated under…." (Wayne Stroessner) NR 446 should deal only with mercury. Much work could be done to clean up other pollutants with other rules yet to be revised. (Mark Yeager)		
8.	Best estimate of the environmental improvement from the implementation of the proposed rules. Impact of the proposed rules on fish advisories.		The proposed rule would reduce atmospheric mercury emissions and subsequently reduce mercury deposition to Wisconsin's environment. This would reduce the amount of mercury entering the State's water bodies and over time, reduce the amount of mercury in fish and wildlife. The department believes that with a reduction of mercury deposition, there would be an eventual reduction in the number	- From results of atmospheric deposition modeling, use estimated impacts of wet/dry deposition as modeling inputs to run a Regional Mercury Cycling Model, to estimate the multi-media fate of the mercury in WI watersheds and corresponding impacts to fish advisory levels. - Conduct evaluation to assess net environmental improvements from rule, taking into consideration the need to landfill flyash, which is no longer		

			of water bodies with fish consumption advisories. Since fish consumption advisories can be viewed as having a potential negative impact on the State's tourism industry, reducing the number of fish consumption advisories would have a positive economic impact on the State's tourism industry. *From the draft Environmental Assessment.* (Wayne Stroessner)	salable due to carbon and mercury levels. (Joe Shefchek) Needs to be included as part of a regulatory needs assessment taking into account environmental benefits including impact on fish advisories and economic and technological feasibility issues relating to control. (Annabeth Reitter) (This is an issue that must be scientifically answered by the TAG.) The statement "Utlimately, regional reductions in mercury emissions will be needed to improve water bodies in the state," does not included how this can be accomplished. (The release of any mercury only adds to the amount of mercury already in our water bodies. By reducing the amount of emissions, only the rate of increase is reduced. We might still be releasing a greater amount of mercury than the environment can handle. The total quantity is still increasing. Unless the TAG can establish the rate of emissions vs the rate of sediment reduction, there is not reason to suggest that mercury levels in water bodies of in fish will be reduced.) An answer by Doug Knauer, WDNR Bureau of Research states:"Mercury that becomes attached to bottom sediments is for the most part not very available for methylation by bacteria." (This topic and the method and the rate by which mercury becomes attached to bottom sediments should be scientifically explained in the rule.) (Wayne Stroessner)		

				Assuming WI's location on the planet is not much different from MN's, a good estimate is to see Hg deposition in WI alone reduced from 9% to 15%. Health care costs in the general population and school districts for special education programs will be reduced. Other than allowing improved human health, it may be years before fish advisories can be lifted. All of these are compelling reasons to start as soon as possible with the cleanest standards. (Mark Yeager)		
9.	What is the economic cost to the state of having mercury contaminated lakes? What is the cost to the state if mercury rules are not implemented?		Reducing the mercury concentration in fish will reduce the human health risk associated with that portion of the population that consumes fish. It will also reduce the potential negative economic impacts associated with fish consumption advisories. Under DRAFT PART II B. it states: In addition to the health risks caused by elevated levels of mercury in the environment, the Department is also concerned with the important economic consequences associated with a potential reduction of recreation and tourism activities. Each year the Department sells approximately 1.5 million fishing licenses (1 million are residents) generating approximately $1.1 billion in expenditures to the state. Adding to license sales is the significant revenue provided by sales of food, lodging, gasoline, and sporting equipment related to fishing as an activity with a total economic impact of $2.1 billion statewide. The	- Complete economic analyses based on the results of atmospheric deposition/Hg cycling fate modeling, which would estimate improvement to fish advisory levels from rule implementation. No action alternative should also consider future reductions from Federal MACT and potential multi-pollutant bills. (Joe Shefchek) A study to assess the impact of mercury contamination and fish advisories on the water resources of the State and the users of those water resources to include trend assessments of representative measures such as property values, fishing license sales, boating sales, etc. (Annabeth Reitter) The rule and DNR commentary indicate the value of tourism in the state, but they do not attempt to place a value on what would result if mercury contamination caused tourists to be discouraged from visiting our lakes and streams especially for fishing. The rule covers the estimated costs for cleaning up our power plants. Perhaps a subjective value could be placed on the		

			sport fishing industry accounts for 30,500 jobs in the state each year. The Department is concerned that the continual listing of fish consumption advisories because of elevated levels of mercury could cause a corresponding decrease in recreation and tourism and have a direct economic impact on the state. The rule provides more detail on the cost of controlling mercury levels by coal-burning utilities. i.e. The estimated cost of the proposed rule is based on the NETL information applied to the Wisconsin utilities at each of the discussed reduction levels. The control cost assume that carbon impacts are minimized thereby avoiding any land filling cost for flyash. The first phase costs are estimated at 0.02 cents per kilowatt-hour using activated carbon sorbent. For an average household consuming 1000 kilowatt-hour per month this results in an additional cost of $2 per year and annual utility cost of $8 million. The second phase results in a 50% mercury emission reduction with a cost of $4 per year and annual utility cost of $17 million. The final phase, a 90% mercury emission reduction, is estimated to cost $10 per year per household and	effect of lost fishing activities in the state. Under Draft Part IIB, Environmental Assessment: At a reduction of only five percent of fishing activities because of a “mercury scare,” there could be a loss of 75,000 (1.5 millions x 5%) fishing licenses; a loss of approximately $ 55,000,000 ($1.1 billion x 5%) in expenditures normally generated for the state. Adding to the loss in license sales is the significant revenue provided by sales of food, lodging, gasoline, and sporting equipment related to fishing as an activity that would produce another loss of $ 105,000,000 ($ 2.1 billion x 5%) from its normal annual economic impact of $ 2.1 billion statewide. The sport fishing industry accounts for 30,500 jobs in the state each year. Which means that 1,525 jobs could be lost. (Wayne Stroessner) Economic costs are so profound they cannot be accurately totaled at this time. Every lake in our state is under a fish advisory. In order for every lake to be affected, our air, water, soil and human health in WI is also negatively impacted. Costs will likely rise beyond our ability to deal effectively with the problem if rules are not implemented. (Mark Yeager)		

			annual utility cost of $35 million (see Table 5). *From the draft Environmental Assessment.* (Wayne Stroessner)			
10.	Better understanding of the source of mercury deposition.	No reference in rule language	Environmental Assessment p. 4, Table 1; p. 8; p. 9, Table 2, Figure 1 (John Coleman)	- Update mercury emissions inventory to reflect most recent information on industrial, commercial, domestic and natural sources - including review of data available on the form of mercury emissions (i.e., ionic, elemental, or particulate). - Complete atmospheric deposition modeling to estimate the potential affect of regional controls on mercury deposition (i.e., what happens if mercury transport from surrounding states is eliminated) versus what happens to deposition if controls are implemented only in Wisconsin. (Joe Shefchek) Establish a research council to develop the necessary information to identify mercury contributions from local and regional sources and assess environmental impacts. This work of the research council should serve as the foundation for establishing regulatory requirements. This work needs to be completed before regulatory reduction requirements are established. (Annabeth Reitter) See Mark's comments in #4 and #8 of this table. To act decisively and with responsibility for the people in WI and future generations, a better understanding is not necessary now, but will come as we take action to clean up Hg deposition. (Mark Yeager)		

11.	Unresolved issues.	---------	(John Coleman)	Unclear what is meant by this issue statement? (Joe Shefchek) Benefits of mercury reduction in our environment must be included in the Mercury CAC report. (Mark Yeager)		
12.	What is the safe dose / exposure for wildlife?	No reference in rule language	Environmental Assessment p. 9; see http://www.epa.gov/mercury for EPA's "Mercury Research Strategy" Chapter 2; also see the NAS July 200 report http://books.hap.edu/books/0309071402/html#pagetop (John Coleman)	- Complete a review of current studies and status update of results - consider WDNR Study on Mercury Exposure in Common Loons (2001 Progress Report is available). (Joe Shefchek) Needs to be included as part of a regulatory needs assessment. (Annabeth Reitter) Note State Dept. of Health Toxicologist's report to CAC. Humans are likely less affected than loons, eagles, ospreys, mink, otters and wildlife whose diet is directly connected to fish consumption. Therefore Hg exposure and consequences on smaller organisms (i.e. wildlife) is more profound. There is no "safe" dose. (Mark Yeager)		
13.	Evaluate the infrastructure changes needed to support fuel switching.	No reference in rule language	If prescribed emission control technology is not capable of reducing emissions by required amounts, an alternative fuel source must be used. Thus, if coal-fired generation must be replaced by natural gas-fired generation, additional pipeline infrastructure will need to be constructed to serve additional load requirements. This may include a major upgrade of the			

			existing gas transmission system.(Bill Skewes)			
14.	Establish how credit for early reductions can be secured for meeting federal regulations.	s. NR 446.09 (3)	This refers to certification of reductions, but additional language is needed to ensure that Wisconsin utilities are credited for mercury emission reduction achieved prior to enactment of federal rules. (Bill Skewes)			
15.	Assessment of the environmental impacts of the rule.	ss. NR 446.04 - calculation of baseline emissions; NR 446.07 mercury product reduction projects (6)(b) & (c) – calculated Hg release avoided & fate of Hg not released; NR 446.07(8) – same as above; NR 446.08(8) – pollution reduction projects, similar to above; NR 446.09 – all the language relevant to creating a registry of certified emission reductions & how to go about it; NR 446.11 – all language relevant to determining actual emissions	Regrettably these items, while undoubtedly applicable to tracing the amounts of mercury emitted by various specific sources, might not have relevance to assessing the rule's environmental impact, since we are unable to say with much conviction that a reduction here cancels out a deposition there. But within the limitations of what we have the ability to know, this is probably the best we can do. (Dave Hoopman)			
16.	Evaluate other states and federal programs and proposals.	No reference in rule language	(Dave Hoopman)			
17.	What are the implications for no or limited action on a state or federal level.	No reference in rule language	These are touched on in the original environmental assessment but not covered adequately. (Ed Newman)			
18.	Are there other environmental impacts associated with the implementation of this proposal?	No reference in rule language	These are touched on in the original environmental assessment but not covered adequately. (Ed Newman)			
19.	Establish methods and procedures for mercury product collection program. How does product collection program relate to hotspots analysis? Insure that product collection program fits with new water	NR 446.07 Mercury-containing products reduction projects (pg. 12-13)	No votes as a potential "monkey wrench" (Russ Ruland)			

	quality regulations.					
20.	Review methodology for baseline determination.	NR 446.03 Section 16 Subchapter II (pg. 7-11)	Baseline set after 36 mos., 1st reduction due at 5 years giving 2 years to comply Several issues about baseline determination (see TAG brief 12-11-01) (Russ Ruland)			
21.	The impact of emission caps on industrial growth.	NR 446.03(1)(f), NR 446.03(2)(b)6., NR 446.03(2)(b)7., NR 446.05(1), NR 446.05(2)	June 5, 2001 D. Bazzell memo page 7 Environmental Analysis (Annabeth Reitter)			
22.	Impact on electricity bills.	NR 446.10(1)(f)6., NR 446.12	June 5, 2001 D. Bazzell memo pages 9-10 Environmental Analysis (Annabeth Reitter)			
23.	Comparison of proposed rules and federal MACT.	Proposed NR 446 does not contain any specific provisions that directly address comparison of proposed rules and federal MACT. Specifically, the rule at NR 446.13 for "Rule Evaluation Reports" requires a review (every 18 months) of scientific and technological developments, which occur that affect the ability to control or reduce mercury emissions. Thus, this focuses solely on control technology developments and there are no provisions to account for overlap with the federal MACT or any other future regulations such as multi-pollutant legislation. In addition, under NR 446.08(6) for Pollution Reduction projects, there are provisions stating that emissions reductions cannot be certified from any federal requirements in effect on the date of certification.	NR 446 appears to indicate emissions reductions Since federal MACT is mandated; it must be promulgated by 2004 with initial compliance by 2007. Federal MACT is a performance standard compared to NR 446 that also includes cap and trade provisions. These are two fundamentally different regulatory approaches that may conflict in defining which emissions sources are subject to each rule and also what technologies are used to reduce mercury emissions. In addition, triggering thresholds and compliance methods (testing, monitoring, record-keeping and reporting) may not be the same for NR 446 and federal MACT. Finally, it is not clear whether sources will get credit for early mercury reductions made under NR 446 towards compliance with MACT. Similarly, under federal rules cannot be certified as credits for pollution reduction projects. (Joe Shefchek)			
24.	What impact might the	Proposed NR 446 does not contain	The exact impact of mercury			

	proposed rules have on the emissions of other pollutants?	any specific provisions that directly address rule impact on other air pollutants. The rule does indirectly specify a provision to revise NR 406.04 (Construction Permits) such that NR 446 changes cannot be exempt from obtaining a construction permit.	controls on other air pollutant emissions (such as NOx, SO2 and PM) is not well understood and currently the subject of several studies because there are no commercially proven technologies in operation. Carbon injection could potentially result in increased emissions of particulate. Fuel-switching could reduce mercury but increase/change emission of other air pollutants. Construction permits for emissions changes resulting from NR 446 are not exempt and the timeframe necessary to complete permitting approval could be triggered). Alternatively, future controls for NOx and So2 could impact mercury speciation ultimately affecting selection of the type of mercury control technology, possible stranding costs if what is initially installed for NR 446 becomes less significant (especially if PSD/NSR or dispersion modeling is effective. Consideration of a multi-emission approach is critical for long-term planning regarding capital investments and shutdowns for construction to ensure energy reliability. (Joe Shefchek)			
25.	Relationship between early retirement and meeting rule provisions.		(Scott Meske)			
26.	How did USEPA develop their recommendation on the acceptable dose / exposure for fish consumption advisories?		(Scott Meske)			
27.	Monitoring reassessing and verification methods.		(Kathleen Standen)			
28.	Future mercury research		(Kathleen Standen)			

	agenda and budget.					
29.	Establish mercury emission summary for Wisconsin.	NR 446.11 Annual mercury emissions determination	No clear rule provision for establishing comprehensive emission summary (Marc Looze)			